Clinical Results and Ongoing Studies of New Drug Eluting Stents for the SFA

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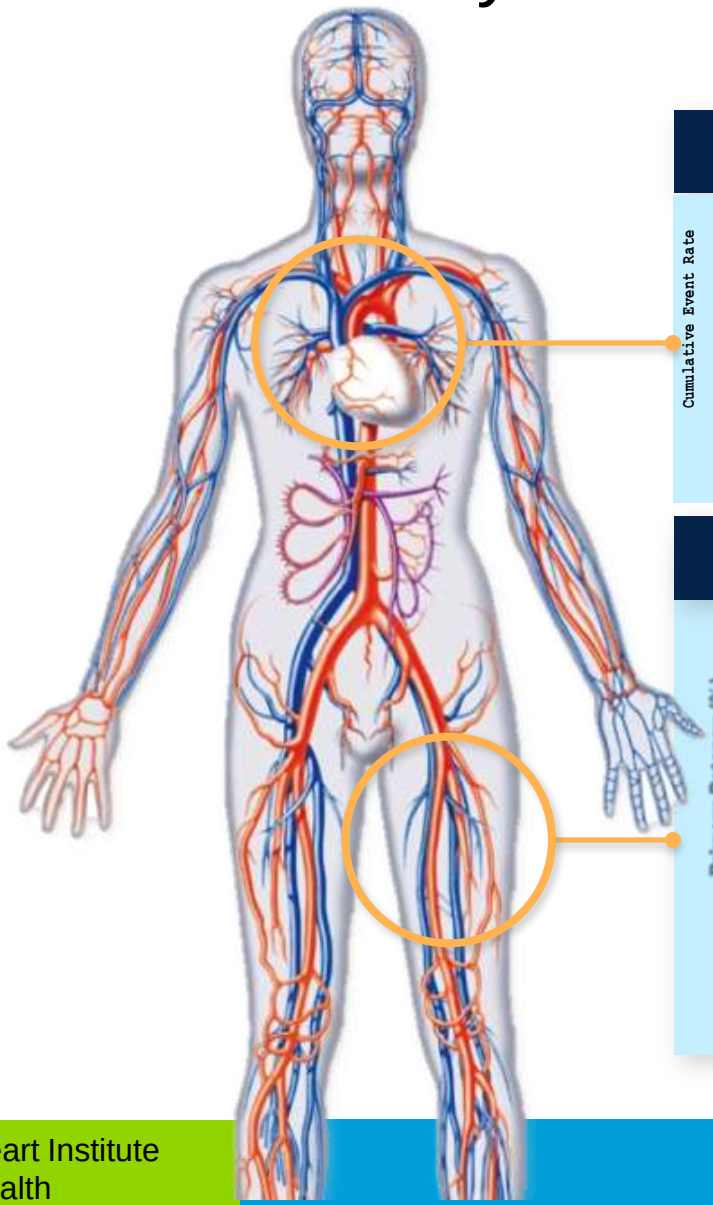
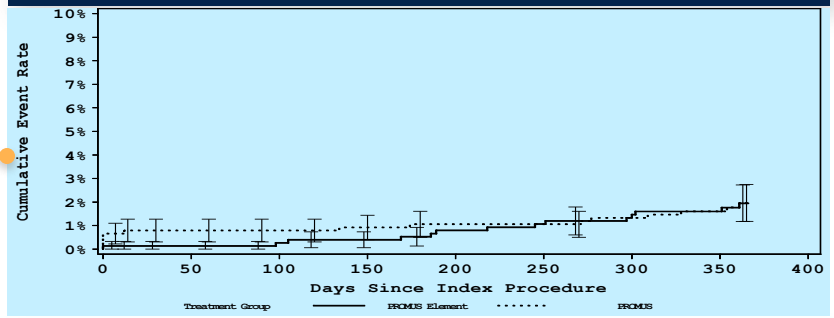
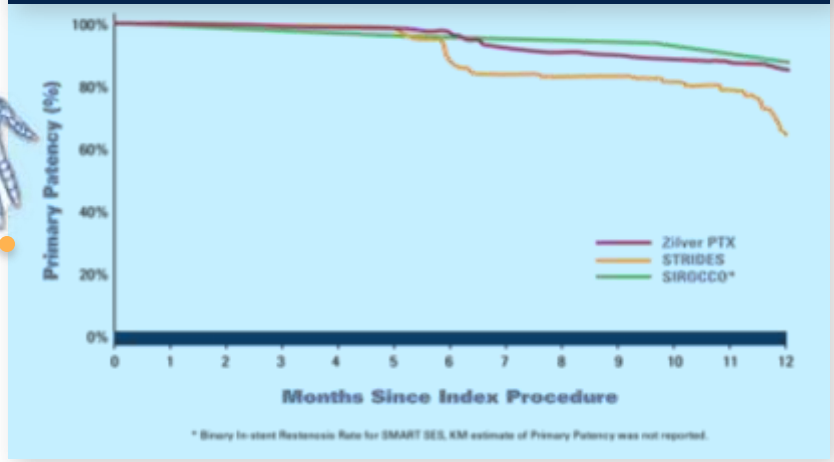
DES outcomes in the SFA lag behind those of the coronary arteries



Coronary DES TLRs



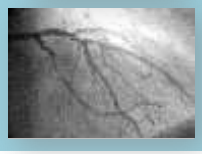
SFA DES Patency



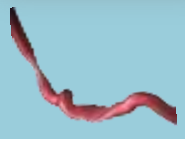
Impact of biological environment and technology features

Contribution to the differential outcomes between arterial beds

Environmental Differences

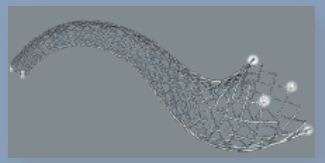


- Mechanical Environment
- Pathological Differences
- Disease Progression



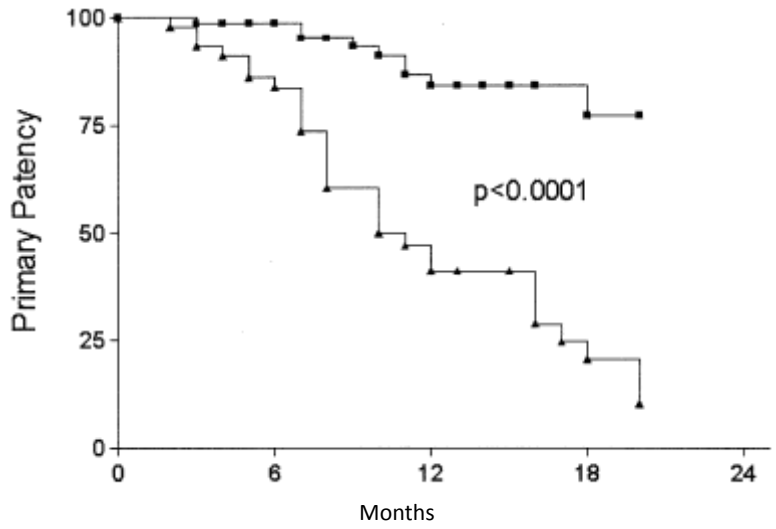
Technology Differences

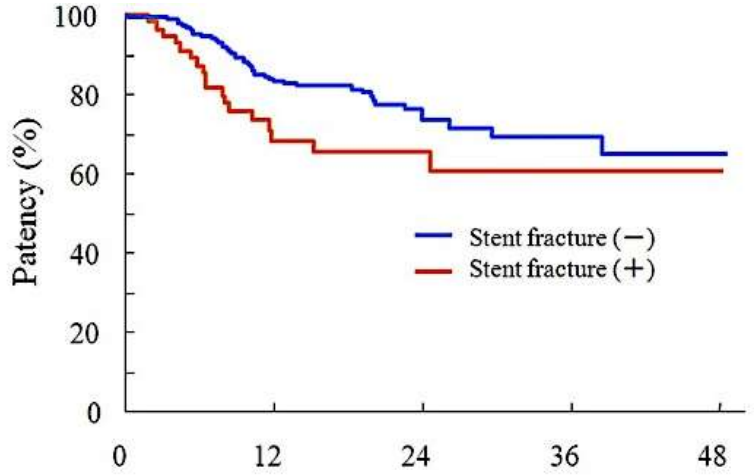
- Balloon Expandable vs. Self-Expandable
- Polymer Selection
- Elution Profiles



Newer stents are highly durable, long term data shows impact on patency

Environmental Differences: Mechanical Environment

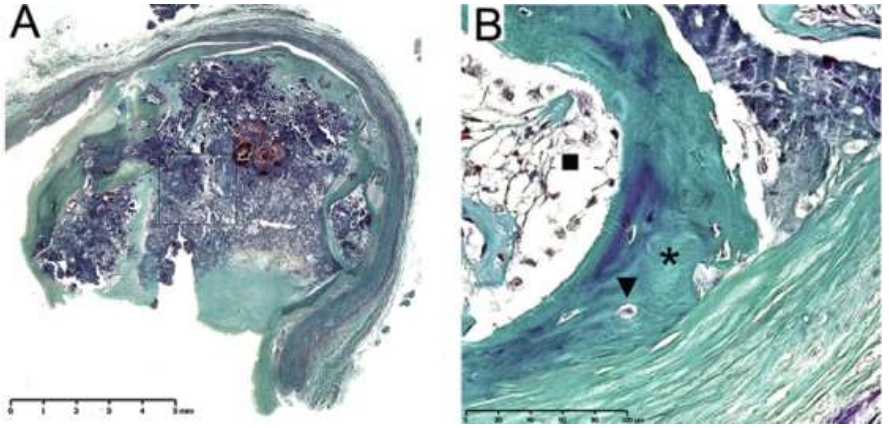




Higher elastin content in native SFA, higher calcification during disease in the SFA

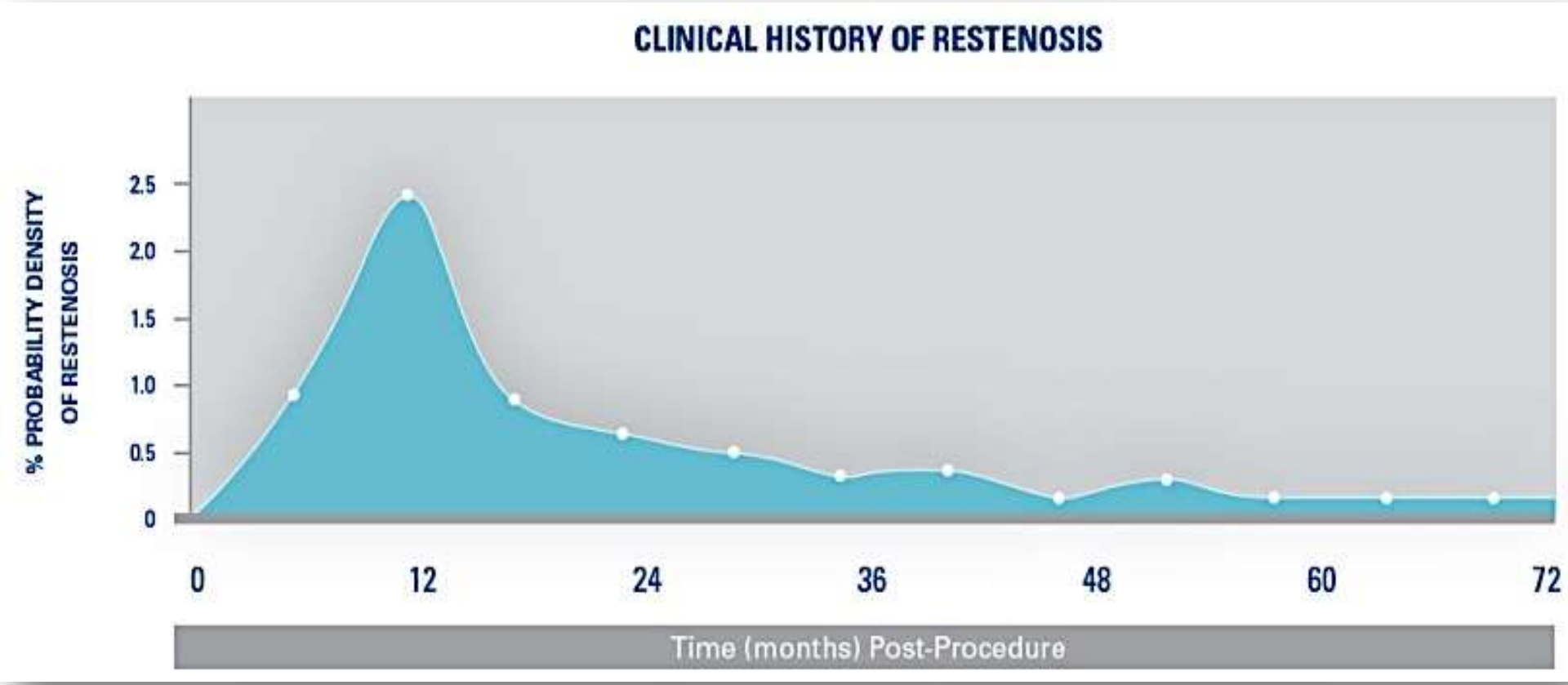
Environmental Differences: Pathology

Collagen:Elastin Ratio
Coronary: 3.12 + 0.21
SFA: 1.89 + 0.14

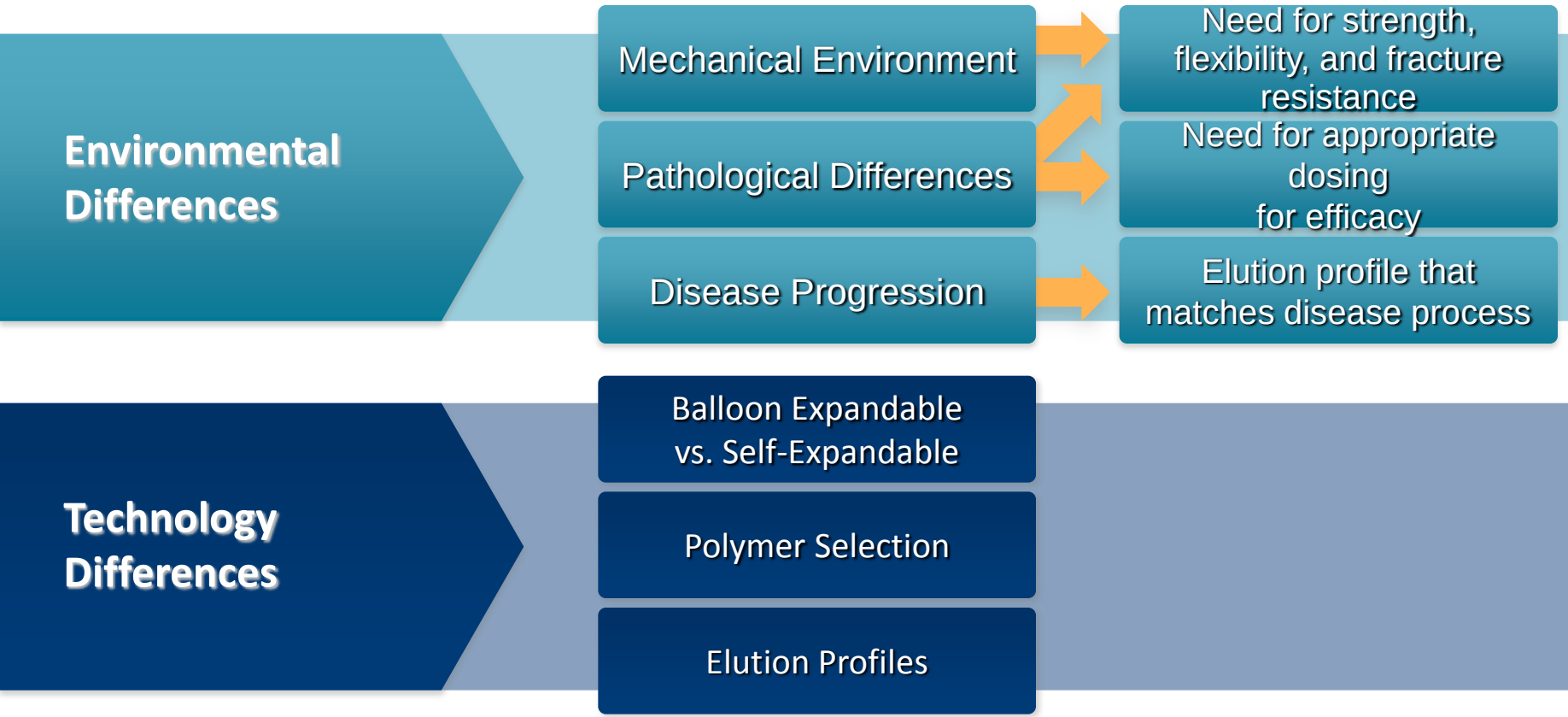


(A) Representative section of a calcified femoral artery lesion.
(B) Magnification of the area of osteoid metaplasia (OM)

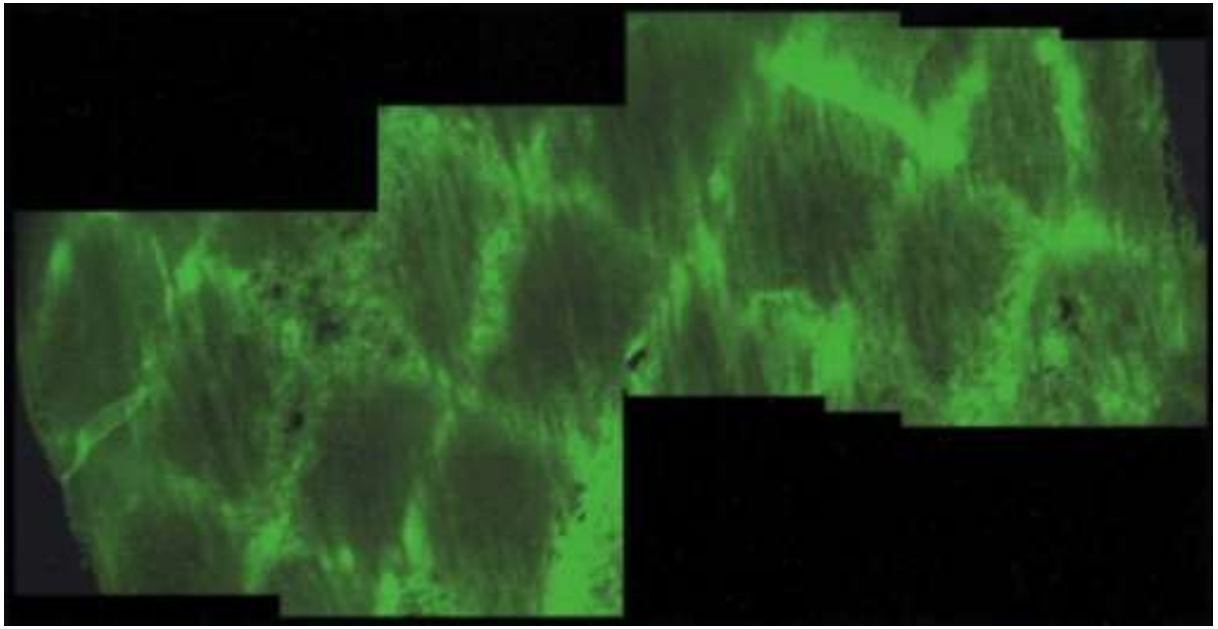
Timing of disease progression much longer in the SFA vs. coronary artery



Design considerations due to environmental differences between coronary arteries vs. SFA



Balloon-expandable coronary drug eluting stents provide uniform deployment and drug delivery



Uniformity of deployed stent and stent scaffolding critical to ensure uniform drug delivery

Coronary Drug Eluting Stent polymers have been shown to be biocompatible with good safety profile

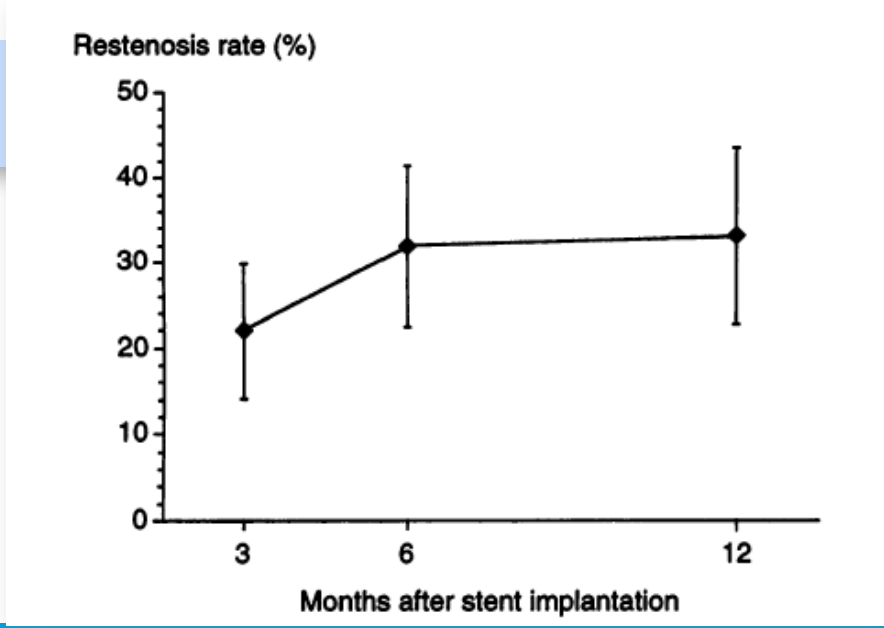
Technology Differences: Polymer Selection

Stent	Polymer
Resolute Integrity™ (MDT)	BioLinx
Xience™ (ABT)	Fluorinated Polymer (PBMA – PVDF)
Promus™ (BSC)	Fluorinated Polymer (PBMA – PVDF)

Elution profile in coronary Drug Eluting Stent matches disease progression in coronary arteries

Technology Differences: Polymer Selection

Stent	Drug Release
Resolute Integrity™ (MDT)	2nd-m 85% Complete
Xience™ (ABT)	1st-m 80%, Complete Elution: 6-m
Promus™ (BSC)	1st-m 80%, Complete Elution: 6-m



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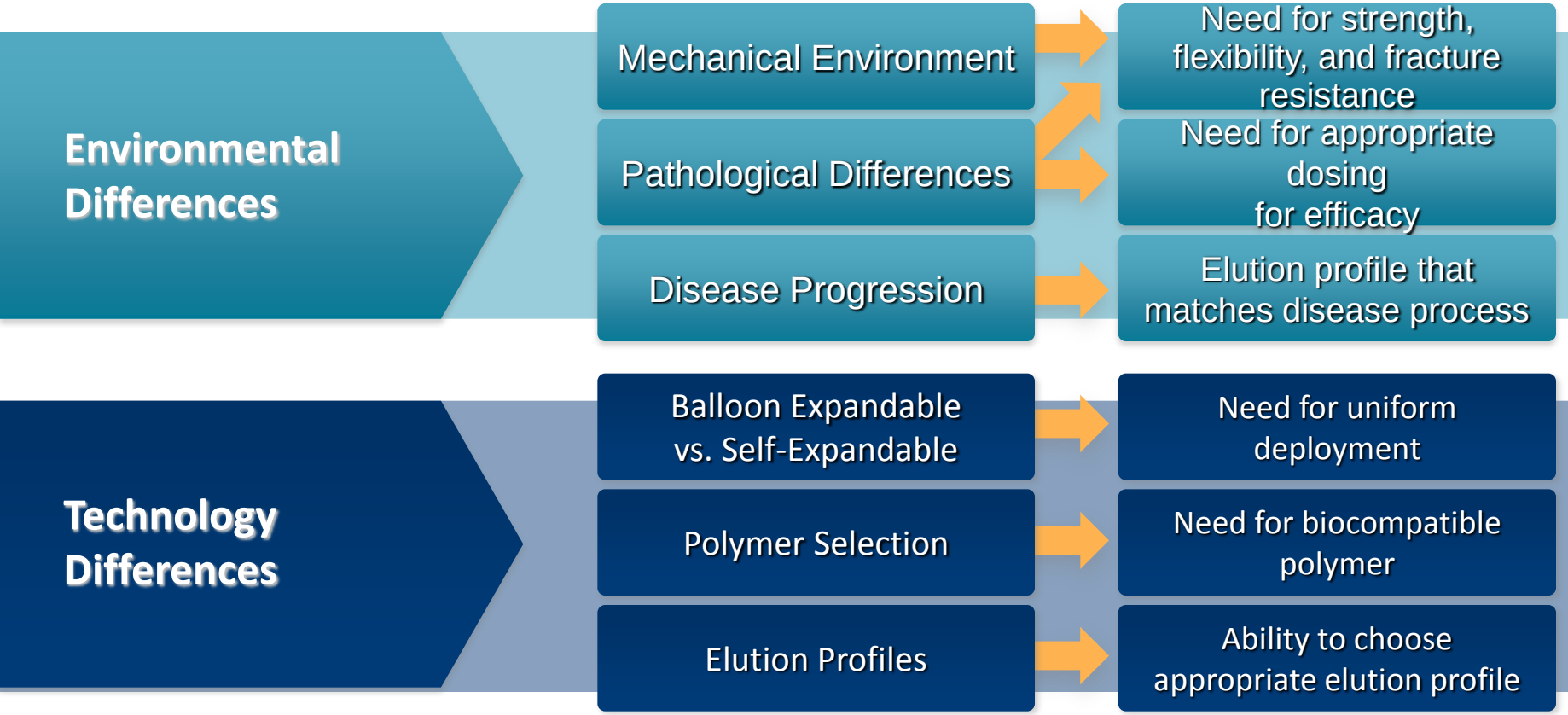
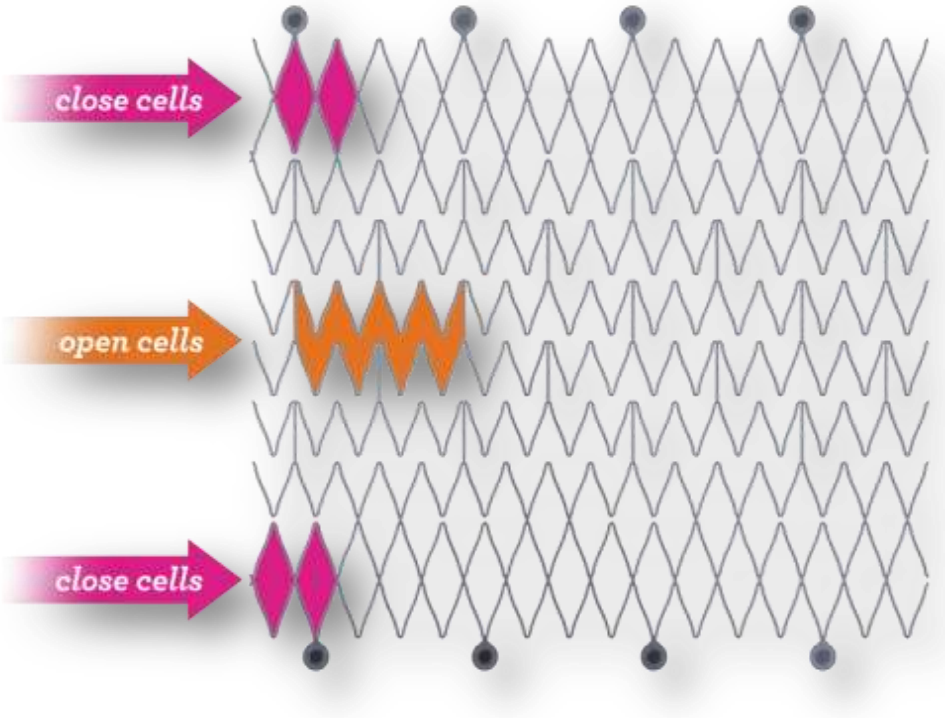
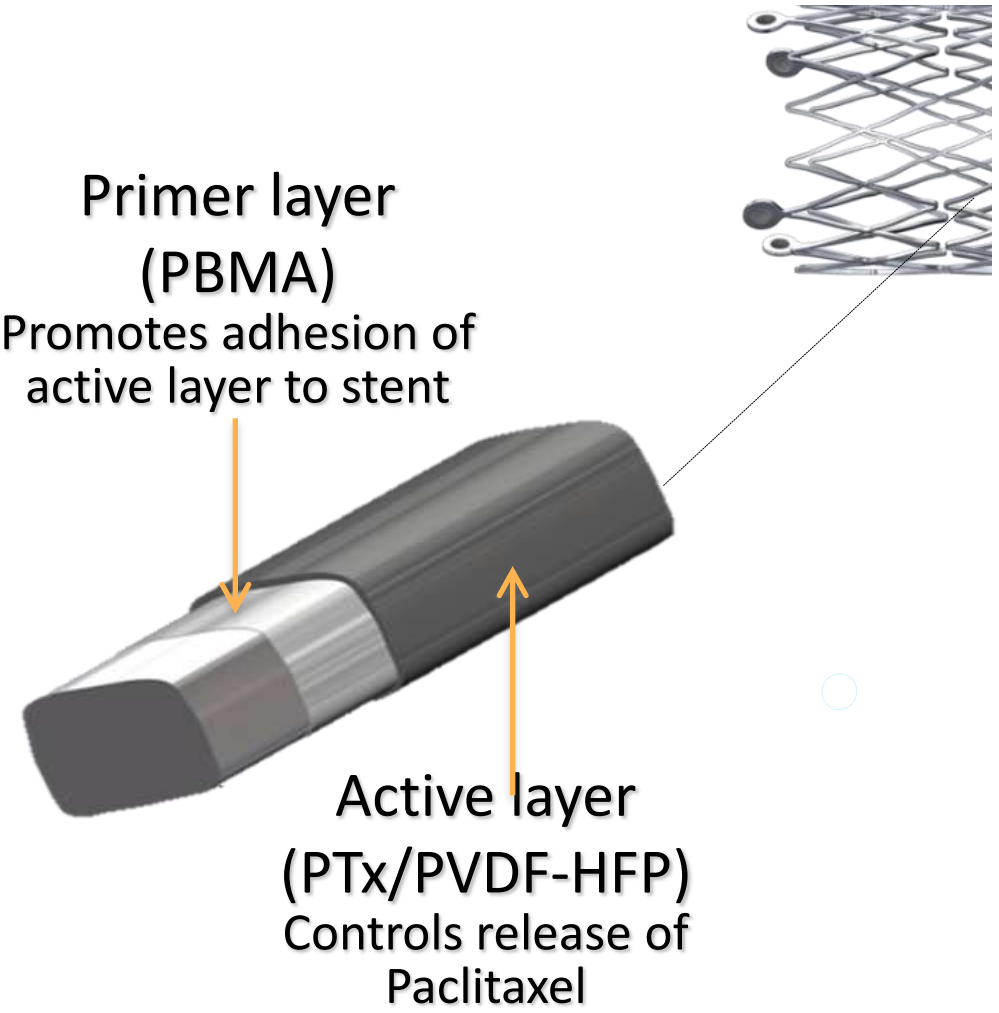


Eluvia™ system design: mechanical

Optimization of force, fracture resistance, and flexibility ensures design addresses mechanical environment

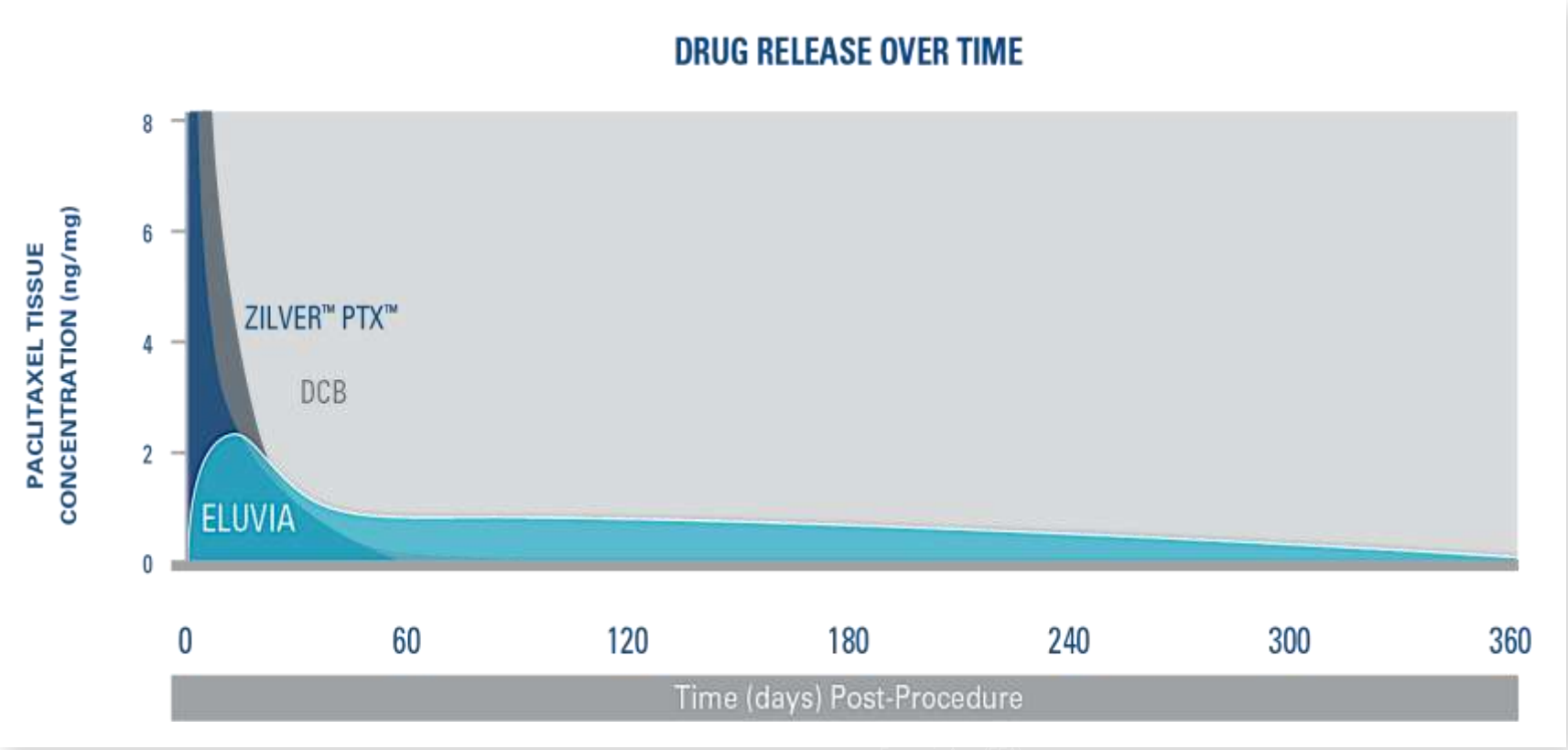


Eluvia™ coating design

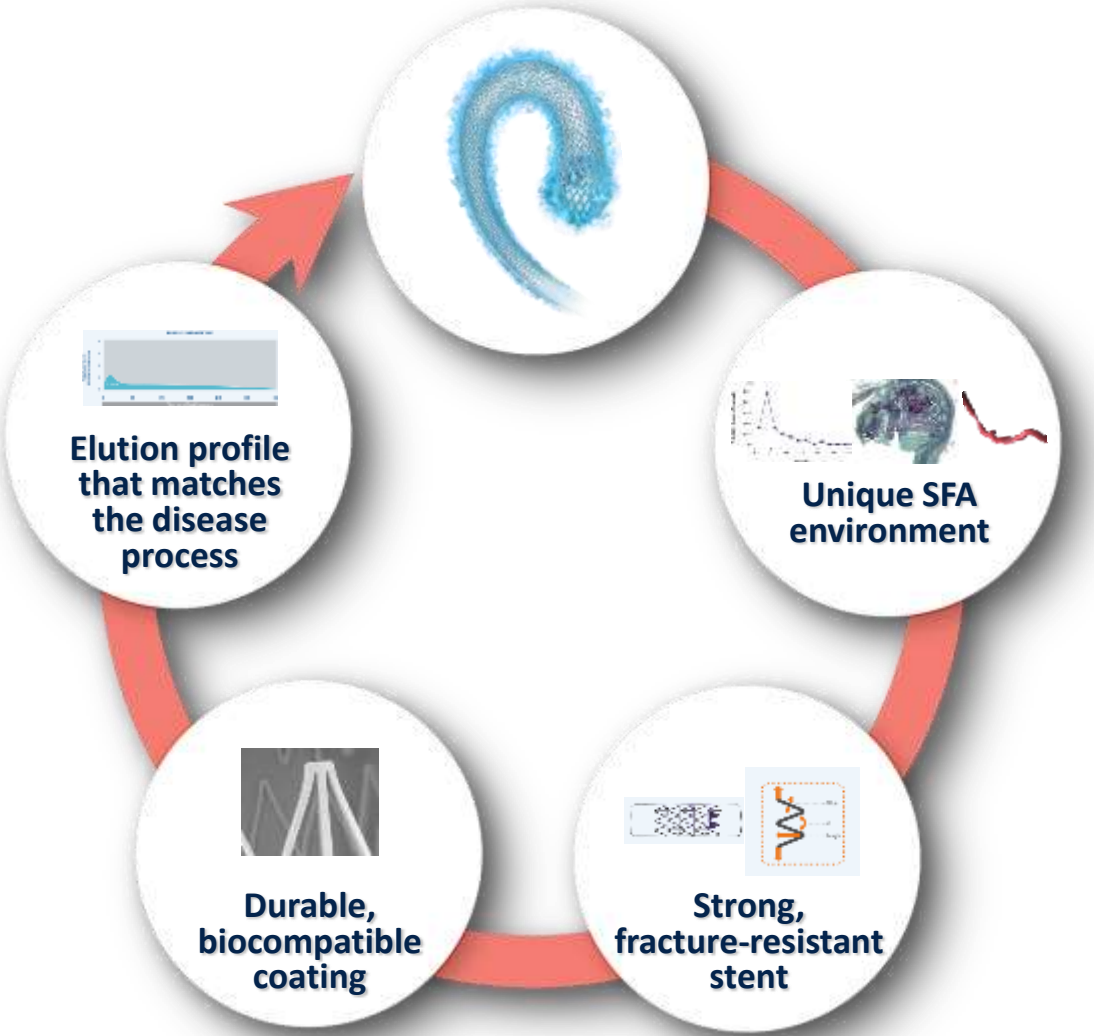


Sustained drug release to reduce restenosis

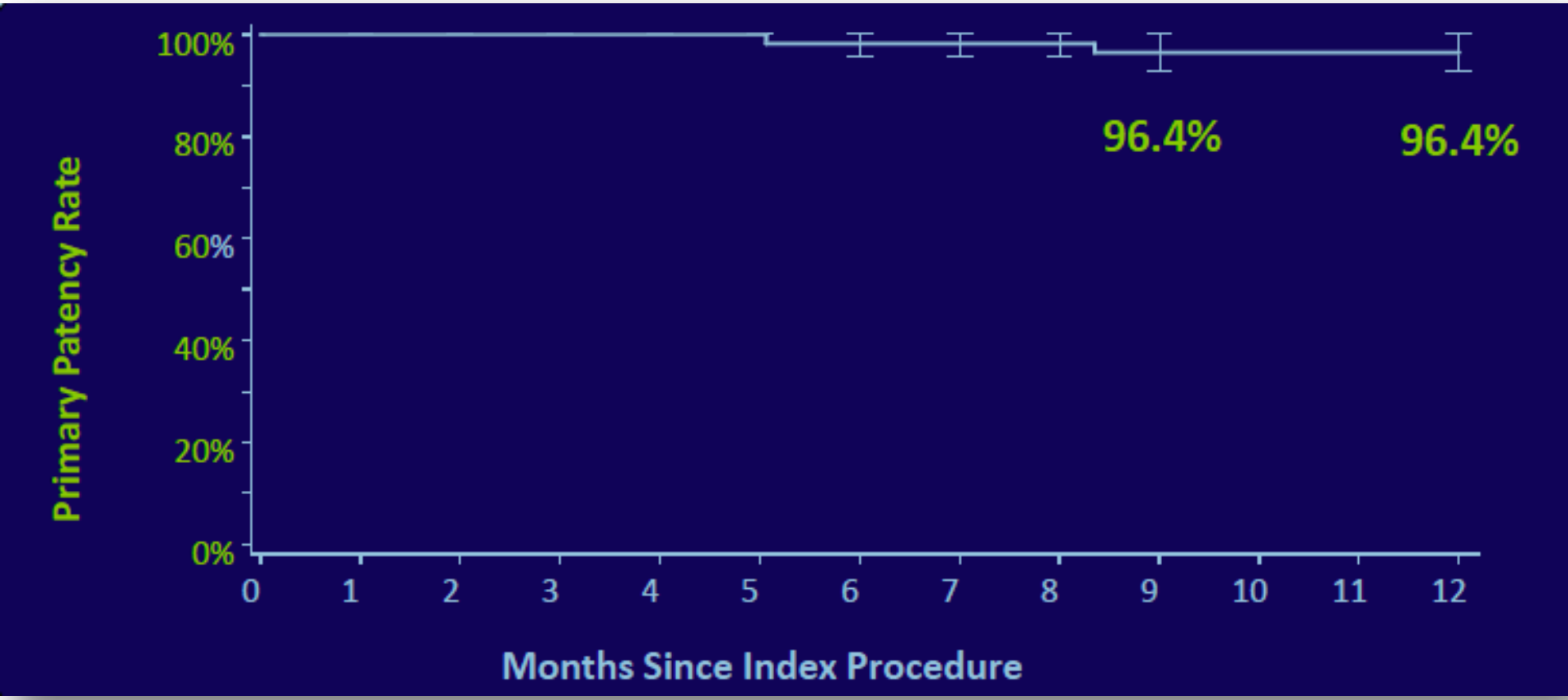
Design Difference: Elution Profiles



Eluvia’s guiding design principles

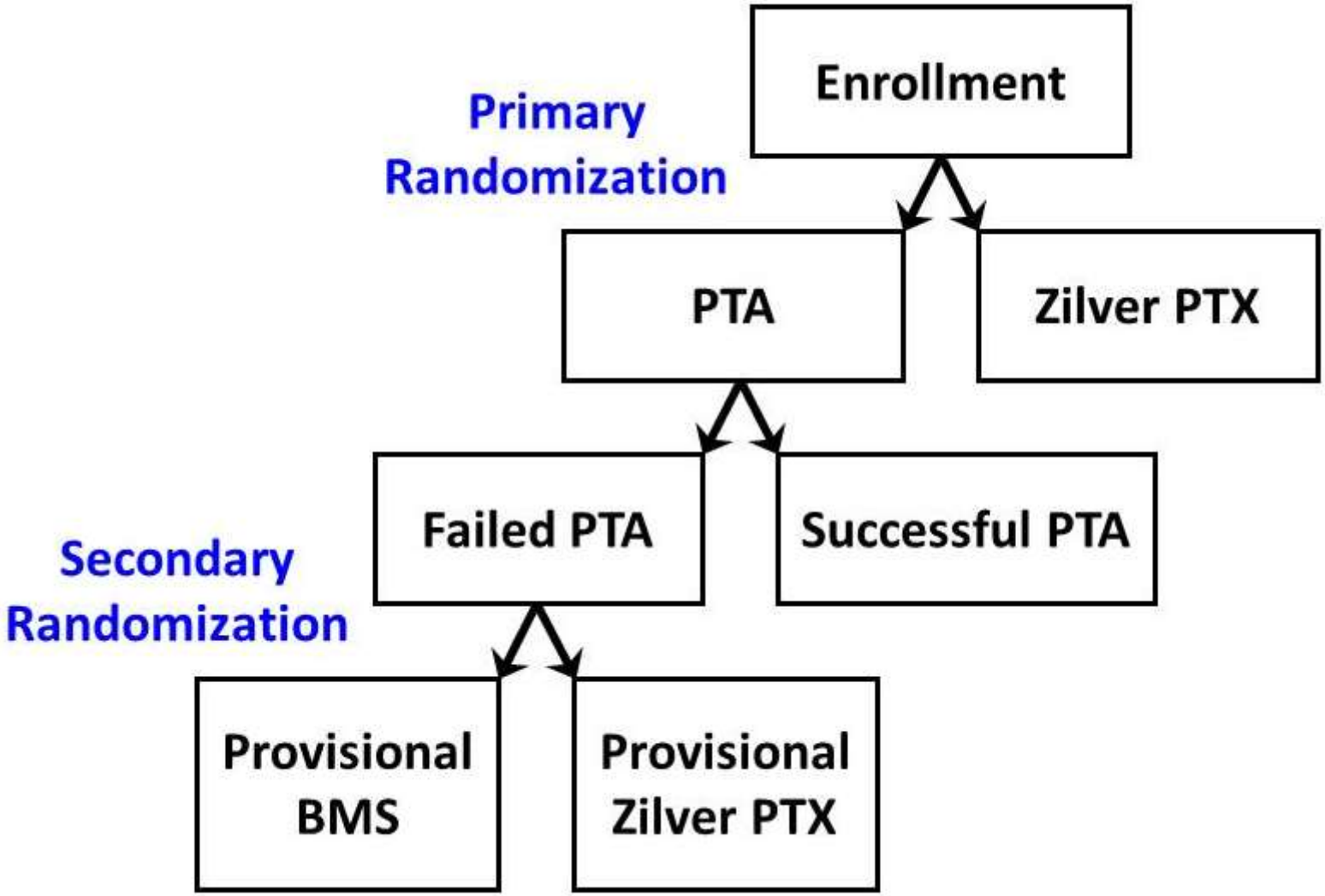


MAJESTIC study:
first Eluvia human experience (n=57)



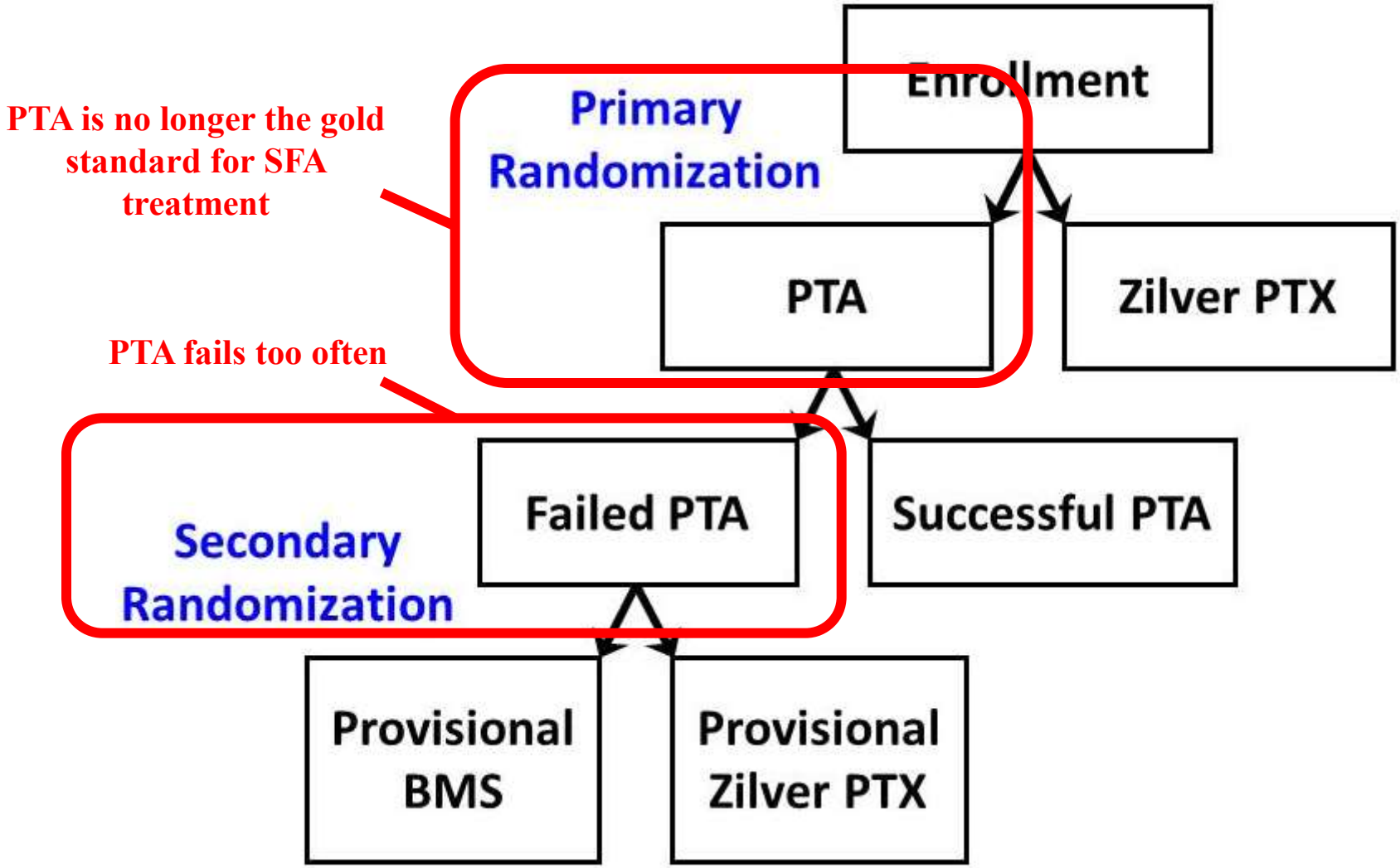
Zilver PTX RCT Study Design

Appropriate when study was designed



Zilver PTX RCT Study Design

Over time the optimal study design has evolved



Optimal Study Design for DES in 2015

- Should include updated control
  - BMS
  - DCB
  - Atherectomy + DCB
  - DES
- Selected lesions tested
  - Should include longer lesions
  - Should include calcified lesions

Optimal Study Design for DES in 2015

- DES vs DES
  - Allows direct comparison of outcomes
    - Same inclusion exclusion criteria
    - Same study parameters (endpoints, follow-up, etc)
  - Eliminates noise from other treatments
  - H2H is favorably looked upon by the physician community
  - Compare to already proven safe and efficacious device with long term data

Boston Scientific Global Pivotal Study

IMPERIAL Trial

Clinical Study Overview: IMPERIAL	
Title	A randomIzed trial coMParing the ELUVIA dRug-elutIng stent versus Zilver PTX stent for treatment of superficiAL femoral and/or proximal popliteal arteries
Primary Investigators	Global: William A. Gray, MD European: Prof. Dr. med Stefan Müller-Hülsbeck
Objective	To evaluate the safety and effectiveness of the ELUVIA Drug-Eluting Vascular Stent System (ELUVIA Stent) for treating Superficial Femoral Artery (SFA) and/or Proximal Popliteal Artery (PPA) lesions up to 140 mm in length.
Study Design	The trial consists of the following: •A prospective, multicenter, 2:1 randomized (ELUVIA vs Zilver PTX), controlled, single-blind, non-inferiority trial (RCT) •A concurrent, non-blinded, non-randomized, single-arm, pharmacokinetic (PK) substudy A subject may be enrolled in the RCT or the substudy; but not in both

IMPERIAL Study Stents

	Zilver PTX Cook Medical		Eluvia™ DES Boston Scientific	
Product Image				
CE Mark/US Approval	**CE**	**US**	**CE**	**US**
	✓	✓	**Pending**	
Stent Platform	Zilver Flex		Innova	
Material	Nitinol		Nitinol	
Polymer	None		Biostable Polymer Matrix	
Drug	Paclitaxel		Paclitaxel	
Deployment	Self-expandable		Self-expandable	
Sizes	Diameter	Length	Diameter	Length
	6-8mm	20-120mm	6-7mm	40-150mm

www.abbottvascular.com/int/products/peripheral-intervention/xience-prime-btk.html#ordering-information.
www.medicalexpo.com/prod/abbott-vascular/peripheral-stents-drug-eluting-90137-572891.html
Cook Medical. 2014. Zilver PTX Drug-Eluting Peripheral Stent Instructions for Use
http://zilverptx.cookmedical.com/us/index.html#
Eluvia devices are not for sale in the U.S.

Boston Scientific Global Pivotal Study

IMPERIAL Trial

Clinical Study Overview: IMPERIAL	
Subjects	• 465 subjects treated with ELUVIA (N=310) or Zilver PTX (N=155) • 12-20 subjects treated with ELUVIA in the PK substudy
Investigational Centers	Up to 75 study centers worldwide: •US, Canada, New Zealand, Belgium, Germany, Austria, and Japan •Up to 10 study centers in US will enroll subjects in the PK substudy
Primary Efficacy Endpoint	**Primary vessel patency** as assessed by duplex ultrasound (DUS) at 12 months post-procedure and adjudicated by an independent core laboratory. *Demonstrate that the 12-month primary patency for the ELUVIA treatment group is non-inferior to the Zilver PTX control group*
Primary Safety Endpoint	**Major Adverse Event (MAE) rate** defined as •All cause death through 1 month •Target limb major amputation through 12 months •Target lesion revascularization (TLR) through 12 months *Demonstrate that the 12M MAE-free rate of the ELUVIA treatment group is non-inferior to the Zilver PTX control group*

Boston Scientific Global Pivotal Study

Key Inclusion Criteria

- Subjects age 18 and older
- Chronic, symptomatic lower limb ischemia defined as Rutherford categories 2, 3 or 4
- Stenotic, restenotic or occlusive lesion(s) located in the native SFA and/or PPA:
  - Stenosis ≥ 70% by visual angiographic assessment
  - Vessel diameter ≥ 4 and ≤ 6 mm
  - Total lesion length (or series of lesions) ≥ 30 mm and ≤ 140 mm
    - Lesion segment(s) must be fully covered with one ELUVIA stent or up to two Zilver PTX stents
  - For occlusive lesions requiring use of re-entry device, lesion length ≤ 120 mm
  - Target lesion located at least three centimeters above the inferior edge of the femur
- Patent infrapopliteal and popliteal artery

Conclusion

- The IMPERIAL Global Pivotal Study will evaluate the safety and efficacy of the ELUVIA Drug-Eluting Vascular Stent System (ELUVIA Stent) for treating Superficial Femoral Artery (SFA) and/or Proximal Popliteal Artery (PPA)
- Longer lesions, up to 140 mm, will be treated with the Eluvia stent
- The goal of the study is to prove non-inferiority to the Zilver PTX stent – which has proven safety and efficacy in the SFA with favorable long term data
- The IMPERIAL study design promises directly comparable data for DES treatment in the SFA

Thank you